

Severe local storms, August, 1930—Continued

Place	Date	Time	Width of path, yards ¹	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Springfield, Ill.	13				\$11,000	Severe electrical and wind.	Considerable damage by fires; minor injury to trees and wires by wind.	Official, U. S. Weather Bureau.
Dillon, Mont., and vicinity.	14					Hail.	Crops damaged.	Do.
Brooklyn, Wis.	15	3 p. m.	880		1,500	do.	do.	Do.
Byron, Nebr.	15	5:10 p. m.	1,760		17,500	do.	Considerable damage to crops in places; path 10 miles long.	Do.
Hamburg, Pa.	15				20,000	Hail and several electrical storms.	Barn wrecked; all crops damaged.	Do.
Connecticut and Massachusetts (parts of).	16			5	1,500,000	Wind, hail, electrical, and cloudburst.	Damage chiefly to tobacco; livestock killed; goods in cellars damaged.	Hartford Courant (Conn.).
Clatonia, Nebr.	18	10:30 a. m.	1,320		2,000	Tornado and hail.	Barn wrecked; crops damaged; path 1.5 miles.	Official, U. S. Weather Bureau.
Tullos, La. (near)	18	3 p. m.	440		3,000	Wind.	Oil derricks damaged; path 14 mile long.	Do.
Levy, N. Mex. (near)	18	3-3:30 p. m.	1,760			Hail.	Character of damage not reported.	Do.
Garland, Mont.	18					do.	Much alfalfa seed destroyed.	Do.
Wymore, Nebr.	19	10 a. m.	4 mi.		10,000	do.	Crops damaged in places.	Do.
Leesville, La.	19	3-3:30 p. m.	5 mi.		6,000	Hail and wind.	Chief damage to crops; path 20 miles long.	Do.
Arthur, Nebr. (5 miles east)	19	4 p. m.	440		25	Small tornado.	Minor crop injury; path 1/2 mile long.	Do.
Mineral Wells, Tex. (near)	19	do.	1,760		1,200	Wind.	Buildings damaged.	Do.
Ville Platte, La. (5 miles east)	19	do.	50		500	Probably tornado.	Cotton and small buildings damaged; path 1 mile long.	Do.
Larned to Belpre, Kans.	19	5-6 p. m.	2,500		75,000	Hail.	Much damage to glass, roofs, and autos; crops badly cut.	Do.
Wauneta, Nebr.	19	do.	1,760		8,000	do.	Crop damage 35 per cent in places; path 7 miles long.	Do.
McCook, Nebr.	19	7:45 p. m.	2 mi.		20,000	do.	Crops damaged; roofs pierced; path 30 miles long.	Do.
Greensburg to Wilmore, Kans.	19	11:30 p. m.	do.			Hail and wind.	Crops almost total loss in some localities; path 15 miles long.	Do.
Filley, Nebr.	19		3 mi.		3,000	Hail.	Considerable crop injury over small areas; path 7 miles.	Do.
Superior, Nebr. to Glasco, Kans.	19		10 mi.			Violent wind and probably small tornado.	Trees, wires, and small buildings blown down; probably small tornado near Jamestown.	Do.
Geary, Okla.	20	2:30 a. m.	3 mi.		14,000	Wind.	Chief damage to crops; path 9 miles long.	Do.
Barnston, Nebr.	20	10 a. m.	2,640		9,000	Hail.	Considerable crop damage in places; windows broken; some poultry killed; path 6 miles long.	Do.
Dane County, Wis. (eastern).	20	2-3 p. m.	880-1,760		100,000	do.	Crops, especially tobacco, severely damaged; path 10 miles long.	Do.
Billings, Mont.	20	5-5:30 p. m.				do.	10,000 acres of beets, beans, small grains, and alfalfa severely damaged.	Do.
Bon Homme County, S. Dak.	21	7 a. m.			25,000	Wind and hail.	Buildings damaged and crops ruined in scattered areas.	Do.
Madison (northern), Pierce and Knox Counties, Nebr.	21	7-9 a. m.			10,000	Hail.	Crops considerably damaged in small areas.	Do.
Bruning, Nebr. (3 miles north).	21	1-2 p. m.	5 mi.		12,000	do.	Damage to property light to heavy in places; path 35 miles long.	Do.
Monument, Colo.	21		2 mi.		10,000	do.	Crops damaged; windows broken.	Do.
Osmond, Nebr.	21		do.		20,000	do.	Crops damaged 5 to 10 per cent in places.	Do.
Cotton and Jefferson Counties, Okla.	22	3 p. m.			275,000	Hail and wind.	Heavy crop loss; much poultry and some livestock killed; 4 residences destroyed and 3 damaged.	Do.
Harmon County, Okla.	22	7 p. m.			15,000	Hail.	Chief damage to crops.	Do.
New York City, N. Y., and vicinity.	23	A. m.				Wind, rain, and electrical.	Cellars flooded; traffic halted; wires and trees broken; boats torn loose; some loss of life.	Do.
Gordon, Nebr.	23	3 p. m.	1,760		10,000	Hail and rain.	Crops damaged in small areas; some damage by flooding.	Do.
Harriet and Wall, Tex.	24	7 p. m.	880		55,000	Tornado.	Crops and buildings destroyed.	Do.
Nolan, N. Mex. (near)	27	3-3:30 p. m.	2 mi.			Hail.	Crops damaged about 40 per cent; path 2 miles long.	Do.
Alexandria, Nebr. (2 miles west).	28	4:30 p. m.	3 mi.		50,000	do.	Serious crop damage in places; some roofs ruined; path 30 miles long.	Do.
Cedar Bluffs to Jennings, Kans.	28	6-6:30 p. m.	1-4 mi.		40,000	do.	Chief damage to corn; path 20 miles long.	Do.
Colmor, N. Mex. (near)	29	1:15-1:45 p. m.				do.	Considerable damage to corn and beans.	Do.
Fillmore, Thayer, Jefferson, and Gage Counties, Nebr.	30	1-5 p. m.	30 mi.		28,700	do.	Crops damaged in scattered areas; path 70 miles.	Do.
Table Rock, Nebr.	30	4-5 p. m.	2 mi.			do.	Crops damaged.	Do.

RIVERS AND FLOODS

By R. E. SPENCER

Except for unimportant rises in the Canadian River at Logan, N. Mex., and in the Colorado at Parker, Ariz., and for the high (artificial) stage of the Trinity River at Dallas, Tex., no flood stages were reached in the important rivers of the United States during August. No damage is reported in the above three cases.

In the Rocky Mountain region, and especially in Utah, considerable destruction was done by local floods resulting from so-called "cloudburst" rains. The Utah floods are discussed at length in an article by Mr. J. Cecil Alter, official in charge of the Weather Bureau office at Salt Lake City, appearing elsewhere in this REVIEW, and the following references to those in other Western States are based upon newspaper reports:

At Pocatello, Idaho, on August 9: Streets and private (residence) property in the western section of the city covered with mud and rock from adjacent mountain slope.

At Round Mountain, in southern Nevada, on August 12-13: Three houses and a hotel washed away.

On Rifle Creek, a small tributary of the Colorado River in Garfield County, Colo., on August 9: One life lost, a railroad bridge badly damaged, several highway bridges and a 60-foot section of highway washed out, considerable damage (chiefly to merchandise in basements) in the town of Rifle, and some livestock losses in the vicinity.

At Nogales, Ariz.-Sonora, Mex., on August 7: Two lives lost, 15 adobe buildings destroyed, 3,000 people rendered homeless, business houses flooded, electric power and telephone systems disabled. Damage estimated at several hundred thousand dollars, of which the greater part occurred in Sonora.

Owing to the continued dearth of rain in many sections, and the consequent continued fall in rivers, publication of a discussion of the effect of the drought on river stages is being deferred until some future issue of this REVIEW.

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
MISSISSIPPI DRAINAGE					
Canadian: Logan, N. Mex.-----	<i>Feet</i> 4	28	28	<i>Feet</i> 5.0	28
WEST GULF DRAINAGE					
Trinity: Dallas, Tex. (see note)-----	25	(1)	(2)	27.9	8
PACIFIC DRAINAGE					
Colorado: Parker, Ariz.-----	7	-----	28	10.5	June 7, 17-20

¹ Continued from last month.

² Continued at end of month.

NOTE.—Continued high stage at Dallas, Tex., an artificial condition caused by a temporary dam necessary in levee work below gage.

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

The outstanding feature of the month was the disturbance of tropical origin that was first reported on the daily weather map of August 25 as being central about 400 miles north-northeast of Porto Rico. However, reports received later by mail indicate that this storm was central near 21° N., 56° W., as early as the 22d. It apparently remained nearly stationary until the 25th, and was of comparatively slight intensity during this period.

Charts VIII to XIII cover the period from the 25th to 30th, and on Chart XIII the track of this storm is shown from the 22d to 31st.

The number of days with gales of extratropical origin did not differ greatly from the normal, as shown on the Pilot Chart, over the greater part of the ocean.

The number of days on which fog was reported in different localities is as follows: Over the Grand Banks, on from 11 to 14 days; along the American coast between the thirty-fifth and forty-fifth parallels, from 6 to 15 days; over the steamer lanes, between the twentieth and fortieth meridians, from 1 to 6 days; between the twentieth meridian and coast of Europe from 1 to 11 days.

Barometric data for several island and coast stations are given in the following table:

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian), North Atlantic Ocean, August, 1930

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland-----	29.94	(1)	30.16	25th-----	29.58	20th.
Belle Isle, Newfoundland-----	29.95	² +0.06	30.28	24th-----	29.30	6th.
Halifax, Nova Scotia-----	30.01	³ 0.00	30.28	30th-----	29.58	5th.
Nantucket-----	30.00	³ -0.02	30.28	13th-----	29.74	10th.
Hatteras-----	30.01	³ -0.03	30.24	13th-----	29.76	22d.
Key West-----	30.02	³ -0.02	30.12	4th-----	29.84	21st.
New Orleans-----	30.03	³ +0.01	30.14	4th ⁴ -----	29.92	20th. ⁴
Cape Gracias, Nicaragua-----	29.92	³ +0.03	29.98	5th ⁴ -----	29.86	15th. ⁴
Turks Island-----	30.07	³ +0.03	30.18	4th-----	29.96	26th.
Bermuda-----	30.08	³ -0.06	30.30	4th ⁴ -----	29.60	26th.
Horta, Azores-----	30.19	³ -0.01	30.15	15th-----	29.86	30th.
Lerwick, Shetland Islands-----	29.75	³ -0.05	30.21	31st-----	29.18	14th.
Valencia, Ireland-----	29.88	³ -0.04	30.32	31st-----	29.25	2d.
London-----	29.90	³ -0.09	30.28	25th-----	29.47	3d.

¹ No normal available.

² From normals shown on Hydrographic Office Pilot Charts, based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian time.

³ From normals based on 8 a. m. observations.

⁴ And on other date or dates.

The first decade of the month was characterized by moderate weather over the ocean as a whole, except that on the 2d, 4th, and 5th moderate westerly gales prevailed along the coast of Europe, and on the 7th the station at Julianehaab, Greenland, reported wind southeast, force 9, barometer 29.76 inches, and there was apparently a well-developed depression over the region between Greenland and Newfoundland.

From the 11th to 19th moderate weather again prevailed over the greater part of the ocean, with the North Atlantic HIGH well developed, although on the 11th a low was over the Maritime Provinces, accompanied by moderate southerly gales between the fiftieth and sixtieth meridians, and on the 16th moderate gales were also reported between the fifteenth meridian and coast of Scotland.

On the 20th a Low was central near 48° N., 18° W., with moderate gales between the twenty-fifth meridian and French coast; this moved rapidly eastward, and on the 21st was over northern Ireland, the storm area having diminished in extent and intensity. On the 20th there was also a depression off Hatteras that afterwards increased in intensity, remaining nearly stationary until the 22d, when the center was about 300 miles east of Nantucket.

As previously stated, the weather conditions from the 25th to 30th are shown on Charts VIII to XIII. The first observing vessel to note the tropical hurricane of this period, the approximate track of which is shown on Chart XIII, was the American steamship *Chincha*, Capt. H. J. Svenning; observer, William Sherwin. The *Chincha*, bound from Rio de Janeiro for Baltimore, came definitely within the influence of the hurricane on the 22d, when in latitude 21° 17' N., longitude 56° 02' W. At Greenwich noon of that date the barometer had fallen to 29.88 inches and the wind had backed from east-northeast to southwest and increased to force 7. The position of the vessel was therefore somewhere to the south and west of the storm center. Twenty-four hours later, when the *Chincha* had reached latitude 23° 24' N., longitude 58° 22' W., the wind had backed to east, indicating that the vessel had crossed the path at the rear of the center. Continuing on her course the *Chincha* reached latitude 27° 10' N., 63° 16' W. (D. R.), at Greenwich noon (7.47 a. m. L. M. T.), when it became apparent that the hurricane was recurring and approaching the vessel from the southward. The barometer now was 29.70 inches and the wind northeast, 10. At 3 p. m., local time, the ba-